Central Line Placement: Infraclavicular Approach

Sarah Levasseur AMC 2007
Senior Anatomy Elective
May 18, 2007
Central Venous Line Placement: Subclavian Approach

The Hickman catheter is inserted into the subclavian vein and advanced to the superior vena cava.
Preparation

- Standard universal precautions and sterile technique are employed
- Place patient in Trendelenburg (head down) to reduce chance of air embolism
- Turn patient’s head to contralateral side to expose site better
- Place a rolled towel or sheet between shoulder blades to make clavicles more prominent
Subclavian vein (SCV) is a continuation of axillary vein, diameter is 1-2cm

SCV is just deep to the middle third of the clavicle, running parallel to it

SC artery is superior and posterior to the vein and behind the anterior scalene muscle

SCV follows the imaginary line made between the costoclavicular ligament and suprasternal notch

Right SCV is generally preferred because the dome of the pleura of the right lung is usually lower than the left and the thoracic duct (left sided) is less likely to be lacerated
Anatomy

- Left Brachiocephalic Vein
- Left IJV
- Left Subclavian Vein
- SVC
- Aortic Arch
Anatomy

- Carotid Artery
- Left Brachiocephalic Vein
- Right IJV
- Right Brachiocephalic Vein
- Right Subclavian Vein
- SVC
Direct the needle medially and superiorly toward the suprasternal notch.
Catheter Placement

- Use the finder needle to locate the vein as described in the following sections on specific IV sites.
- Once venous blood is aspirated with the finder needle, insert the large bore needle at the same site and at the same angle.
- Once venous blood is aspirated, grasp the hub of the needle with your non-dominant hand and brace that hand against the patient.
- Lower the needle to the angle parallel to the vein and aspirate to reconfirm flow. If in doubt, confirm that the blood is venous by transducing. Remove the syringe while holding the needle in place and quickly feed the guidewire into the needle.
- Remove the needle over the guidewire and hold it in place with gauze (never let go of the wire!).
- Use scalpel to make a 3-4 mm stab through skin and fascia (sharp end away from guidewire).
- Pass dilator 3-4 cm over guidewire to dilate subcutaneous tissue.
- Pass catheter over guidewire which should exit out of the brown port (if using a triple lumen).
- Advance the catheter (don't lose the wire) and remove the guidewire.
- Aspirate blood and flush each port.
- Suture line in place and consider spacer in a small patient.
- Stat CXR to rule out pneumothorax and check line placement.
Post-Procedure Radiograph

- Left subclavian central line
- Line related pneumothorax
- Nasogastric tube in hiatus hernia